

~~MCHEDLISHVILI, Iv.~~

On the job for 54 years. Obshchestv. pit. no. 7:24 J1 '58.
(MIRA 11:7)

(Gobedzhishvili, Sergo)

KAPUSTIN, K.; PLOTNIKOV, L.; SEREBRYAKOVA, A., inzh.-tekhnolog; ZHILIN, S.,
inzh.-kulinar; GELADZE, S., master-povar; MCHEDLISHVILI, I.

Letters to the editor. Obshchestv. pit. no.7:36-37 JI '59.
(MIRA 12:12)

1. Avtozavodskiy trest stolovoykh, g. Gor'kiy (for Serebryakova).
2. Zheleznodorozhnoye upravleniye rabochego snabzheniya Yuzhno-Ural'skoy
zheleznoy dorogi (for Zhilin). 3. Zaveduyushchiy proizvodstvom stolovoy
No.469, Kiyev (for Geladze).
(Restaurants, lunchrooms, etc.)

KHARINA, N.; MCHEDLISHVILI, I. (Tbilisi); PETROV, M. (stantsiya Agryz, Kazanskoy zheleznoy dorogi); ZHENOV, N. (g.Sovetsk, Kaliningradskoy zheleznoy dorogi); DOROFEYEV, A.; TIMOFEYEV, Ye., gazoapparatchik; ZHORZHOLODZE, G.; TURUTIN, I. (Minsk)

Letters to the editors. Sov. profsoiuzy 17 no.1:39-42 Ja '61.
(MIRA 14:1)

1. Brigadir brigady kommunisticheskogo truda Novosibirskogo kozhevenno-obuvnogo kombinata (for Kharina).
 2. Predsedatel' rayonnogo komiteta profsoyuza zheleznodorozhnikov, Velikiye Luki (for Dorofeyev).
 3. Chlen bibilotechnogo soveta g.Stalino (for Timofeyev).
 4. Predsedatel' Dorozhnogo komiteta profsoyuza rabotnikov zheleznodorozhnogo transporta Zakavkazskoy zheleznoy dorogi (for Zhorzholadze).
- (Trade unions)

GEORGADZE, S.; MATLIN, M.; MIRGORODSKIY, I., starshiy instruktor;
CHERNYSHEV, G., student (Zhdanov); DEKHTYAR, B., metodist;
VYSOTSKIY, V., instruktor; KANUKOV, G. (g. Shakhty, Rostovskoy obl.);
MCHEDLISHVILI, I. (Tbilisi); BABENKO, P. (Poltavskaya obl.)

Readers relate; advise and criticize. Sov. profsoiuzy 18 no.19:30-31
0 '62. (MIRA 15:9)

1. Nachal'nik otдела труда i zarabotnoy platy rudnika "Nittis-Kumuzh'ye" kombinata "Severonikel'", Murmanskaya obl. (for Matlin).
2. Orgmassovyy otдел Krasnodarskogo kraysovprofa (for Mirgorodskiy).
3. Tsentral'nyy Dom kul'tury zheleznodorozhnikov, g. Rostov-na-Donu (for Dekhtyar).
4. Gorodskoy komitet Kommunisticheskoy partii Sovetskogo Soyuz; g. Omsk (for Vysotskiy).
5. Neshtatnyy korrespondent zhurnala "Sovetskiye profsoyuzy" (for Kanukov).
(Tiflis—Engraving) (Trade unions) (Weddings)

MCHEDLISHVILI, I.V.

Quantitative changes in proteins and protein fractions in the cerebro-spinal fluid in tuberculous meningitis. *Pediatrics*, Moskva 36 no.8: 18-22 Ag '58. (MIRA 12:1)

1. Iz kafedry pediatrii (zav. - zaslužennyy deyatel' nauk prof. M.Kh. Ugrelidze) lechebnogo fakul'teta Tbilisskogo meditsinskogo instituta na baze 1-y gorodskoy bol'nitsy (glavnyy vrach Sh.G. Glonti).

(TUBERCULOSIS, MENINGEAL, CSF in,
proteins (Rus))

(PROTEINS, in CSF,
in tuberc. meningitis (Rus))

MOHEDLISHVILI, I.V.

Differential and diagnostic value of the study of blood
proteins by the paper electrophoresis method. Scob. AN
Gruz. SSR 33 no. 2:483-487 F '64. (MIRA 17:9)

MCHEDLISHVILI, M. Z.

"The Problem of Pathomorphological Changes in the Skin During Chronic Organic Neurodermatitis." Cand Med Sci; Tbilisi Medical Inst, Tbilisi, 1953. (TZnBiol, No 6, Nov 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (11)

SO: Sum. No. 521, 2 Jun 55

MCHEDLISHVILI, N.D.; MIRONOV, S.I., akademik.

Pollen from the genus *Trapa* L. Dokl.AN SSSR 90 no.4:659-662 Ja '53.
(MLRA 6:5)

1. Akademiya Nauk SSSR (for Mironov). 2. Sektor paleobiologii Akademii
nauk Gruzinskoy SSR (for Mchedlishvili). (Pollen, Fossil)

HALIVKIN, D.V., akademik; MCHEDLISHVILI, P.A.; MCHEDLISHVILI, N.D.

Developmental stages of the flora of eastern Georgia in the Sarmatian period on the basis of the data of sporozoa and pollen analysis. Dokl. AN SSSR 91 no.3:621-623 J1 '53. (MLBA 6:7)

1. Sektor paleobiologii Akademii nauk Gruz.SSR (for Mchedlishvili P.A. and N.D.).
2. Akademiya nauk SSSR (for Halivkin).
(Georgia--Paleobotany) (Paleobotany--Georgia)

Mchedlishvili, N.D.

USSR/ Geology - Paleontology

Card 1/1 Pub. 22 - 42/60

Authors : Mchedlishvili, N. D.

Title : Spore-pollen complexes in Duabak deposits

Periodical : Dok. AN SSSR 100/4. 769-770. Feb 1. 1955

Abstract : The discovery of spore-pollen flora complexes in the Duabak strata is announced. The geological characteristics of these complexes are described. Four USSR references (1937-1954).

Institution : Academy of Sciences, Gruz-SSR, Paleobiological Faculty

Presented by : Academician S. I. Mironov, October 27. 1954

Mchedlishvili, N. D.
Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 2,
p 29 (USSR)

15-57-2-1382D

AUTHOR: Mchedlishvili, N. D.

TITLE: The Flora and Vegetation (sic) of the Cimmerian Era
According to the Data From Spore-Pollen Analysis
(Flora i rastotel'nost' kimmeriyskogo veka po dannym
palinologicheskogo analiza) Author's abstract of his
dissertation for the degree of Candidate of Biological
Sciences, presented to the In-t botan. AN GruzSSR,
(Botanical Institute of the AS GeorgianSSR), Tbilisi,
1956.

ABSTRACT: Two floral provinces are distinguished in the Cimmerian
of the West trans-Caucasian and West cis-Caucasian
districts: the northern, with the coniferous and broad-
leaf temperate-climate forests, and with the parts
covered with herbaceous vegetation; and the southern,
with subtropical forests rich in Miocene relics. Three
stratigraphic horizons correspond with faunal horizons,
and are established by a spore-pollen analysis of

Card 1/2

SAMOYLOVICH, S.R., nauchnyy red.; MCHEDLISHVILI, N.D., nauchnyy red.;
RUSAKOVA, L.Ya., vedushchiy red.; YASHCHURZHINSKAYA, A.B.,
tekhn.red.

[Pollen and spores of Western Siberia; Jurassic and Paleocene]
Pyl'tsa i spory Zapadnoi Sibiri; Iura-paleotsen. Leningrad,
Gos.nauchno-tekhn.izd-vo neft.i gorno-toplivnoi lit-ry
Leningr.otd.-nie, 1961. 657 p. (Leningrad. Vsesoyuznyi
neftianoi nauchno-issledovatel'skii geologorazvedochnyi institut.
Trudy, no.177). (MIRA 1964)

1.Vsesoyuznyy neftyanoy nauchno-issledovatel'skiy geologorazve-
dochnyy institut (for Samoylovskiy, Mchedlishvili).
(West Siberian Plain--Palynology)

MCHEDLISHVILI, N.D., SAMOYLOVICH, S.R.

"Common floras of Mesozoic and Cenozoic deposits from western
Siberia and Australia."

Report to be submitted for the Intl. Conf. on Palynology
Tucson, Arizona. 23-27 Apr. '62.

MCHEDLISHVILI, All-Union Petroleum Scientific Research Geological
prospecting Inst.

MCHEDLISHVILI, Nataliya Dmitriyevna, kand. biol. nauk;
DAVITASHVILI, L.Sh., red.; AVALIANI, N.M., red. izd-va;
BOKERIYA, E.N., tekhn. red.

[Flora and vegetation in the Cimmerian stage based on
data from palynological analysis] Flora i rastitel'nost'
kimmeriiskogo veka po dannym palinologicheskogo analiza.
Tbilisi, Izd-vo AN Gruz. SSR, 1963. 196 p. (MIRA 16:12)

1. Deystvitel'nyy chlen AN Gruz. SSR (for Davitashvili).
(Palynology) (Paleobotany, Stratigraphic)

MEHEDLISHVILI, N.D.

Significance of angiosperms for the stratigraphy of Upper Cretaceous
sediments. Trudy VNIGRI no.239:5-34 '65. (MIRA 18:7)

MCHEDLISHVILI, N.D.; SAMOYLOVICH, S.R.

Relations between the floras of the Northern and Southern Hemispheres
in the Mesozoic and Cenozoic. Trudy VNIGRI no.239:35-37 '65.
(MIRA 18:7)

GLADKOVA, A.N.; ZAUVER, V.V.; MCHEDLISHVILI, N.D.

Morphology of the pollen grains of Ephedra. Trudy VNIGRI no.239:38-46
'65. (MIRA 18:7)

MCHEDLISHVILI P. A.

Tumadzhniov, I. I. and Mchedlishvili, P. A. "The post-glacial mobility of forest vegetation in the Teberda valley according to pollen analysis data," Trudy Tbilis. botan. in-ta, Vol. XII, 1948, p. 253-55 (Resume in Georgian). - Bibliog: 22 items

SO: U-1034, 29 Oct 53, (Letopis 'zhurnal 'nykh Statey, No. 10, 1949).

MCHEDLISHVILI, P. A.

155T20

USSR/Geology - Paleontology

Jan 50

"The Age of the Korbulev Layers of Transcaucasia and the Northern Aral Sea Region," P. A. Mchedlishvili, Bot Inst, Acad Sci Georgian SSR, 3 pp

"Dok Ak Nauk SSSR" Vol LXX, No 1

Introduces paleobotanical data to prove the Korbulev layers of Torei and Akhaltsikhe must belong to Middle Oligocene period since Aralian formation connected with them dates to Aquitanian epoch of Lower Miocene. Submitted by Acad D. S. Belyankin 10 Nov 49.

155T20

GTSPL Vol. 5-No. 1 Jan. 1952

Mchedlishvili, P.A. (Institute of Botany, Georgian S.S.R. Academy of Sciences), Paleogeography of the Caucasus in the chalk epoch period in connection with paleobotanical data, 1011-6

Akademiya Nauk, S.S.S.R., Doklady Vol. 78, No. 5, 1951

MCHEDLISHVILI, F. A.

Paleontology - Caucasus

Paleogeography of the Caucasus in the karagan period in the light of paleobotanical data.,
Dokl. AN SSSR, 81, no. 5, 1951.

Botanicheskiy Institut Akademii Nauk CCCP.

27 Aug. 1951

Library of Congress. May

1951², Uncl.

9. Monthly List of Russian Accessions, Library of Congress, January 1953. Unclassified.

21 Jul 63

MEHEDLISHVILI, P.A.

USSR/Geology - Spore-Dust Analysis

"Stages of Development of Flora in Eastern Georgia in the Sarmatian Period According to Data of Spore-Dust Analysis," P.A. Mehedlishvili and N.D. Mehedlishvili, Paleogeology Sector, Acad Sci Georgian SSR

DAN SSSR, Vol 91, No 3, pp 621-623

Give contents of spore-dust complex deposits of all Sarmatian stages in eastern Georgia.

State that the development of steppe vegetation in a given section is connected with the regression of a sea in the Upper Sarmatian, with the result that the climate progressively became drier. Presented by Acad D. V. Malivkin 13 May 63.

102738

MCHEDLISHVILI, P.A.

Pinus Pithyusa Standw. pine cone found in the Pontiac deposits of western Georgia. Soob. AN Gruz. SSR 15 no.7:445-449 '54. (MIRA 8:6)

1. Akademiya nauk Gruzinskoy SSR, Sektor paleobiologii, Tbilisi.
Predstavleno deystvitel'nym chlenom Akademii L.Sh. Davitashvili.
(Georgia--Pine, Fossil)

MCHEDLISHVILI, P.A.

More remarks on the age of the flora of Goderdzi Pass. Biol. MOIP.
Otd. bot. 29 no. 1: 21-33 Ja-F '54. (MLRA 7:4)
(Goderdzi Pass--Paleobotany) (Paleobotany--Goderdzi Pass)

MCHEDLISHVILI, P.A.

New data on Pontiac paleobotany in Georgia. Dokl. AN SSSR 96 no.1:185-187
(MIRA 7:5)
My '54.

1. Sektor paleobiologii Akademii nauk Gruz. SSR. Predstavleno akademikom
N.S. Shatskim. (Gudauty District--Paleobotany) (Paleobotany--Gudauty
District)

MCHEDLISHVILI, P. A.

USSR/Geology

Card 1/1 Pub. 22 - 36/54

Authors : Mchedlishvili, P. A.

Title : New data about the flora of the Kotsakhursk horizon

Periodical : Dok. AN SSSR 100/3. 537-539. Jan 21. 1955

Abstract : New geological data are presented regarding the flora covering the Kotsakhursk horizon in eastern Georgia USSR. Thirteen references: 11 USSR, 1 German and 1 Italian (1904-1954).

Institution : Academy of Sciences Georg. SSR, Paleobiological Faculty

Presented by : Academician S. I. Mironov, October 27, 1954

MCHEDLISHVILI, P.O.

New data on flora of the Caritian series in Swoszowice.
Ukr.bot.zhur.13 no.1:95-99 '56. (MIRA 9:9)

1.Akademiya nauk Gruzins'koi BSR, Sektor paleobiologii.
(Swoszowice, Poland--Paleobotany)

MCHEDLISHVILI, P.O.

New data on Tortonian flora of the western Ukraine. Ukr.bot.zhur.
13 no.2:85-88 '56. (MIRA 9:9)

1.Sektor paleobiologii AN Gruzins'koi RSR.
(Ukraine--Paleobotany)

MCHEDLISHVILI, P.A.

New data on the meotic floras of West Georgia. Dokl.AN SSSR 107
no.6:888-890 Ap '56. (MIRA 9:8)

1. Sektor paleobiologii Akademii nauk Gruzinskoy SSR. Predstavleno
akademikom D.V. Maliukinym.
(Georgia--Paleobotany)

MCHEDLISHVILI, F. A.

"The Biostratigraphical Importance and the Paleoecology of the Neogene Floras of the Caucasus."

dissertation defended for the degree of doctor of Geological-Mineralogical Sciences, at the Inst. for Geology. (Jan-Jul 1957)

Defense of Dissertations

Sect. of Geological-Geographical Sci.

Vest. AN SSSR, 1957, v. 27, No. 12, pp. 113-115

MCHADLISKVILI, P.A.

On the age of the floras of Amvrosievka and Kryva in connection with new data concerning the Tortonian flora discovered in the environs of Lvov. Dokl. AN SSSR 114 no.3:627-630 My '57. (MLRA 10:8)

1. Sektor paleobiologii Akademii nauk Gruzinskoy SSSR. Predstavleno akademikom S.I. Mironovym.
(Lvov--Paleobotany, Stratigraphic)

MCHEDLISHVILI, P.A.
GROSSCEYM, V.A.; MCHEDLISHVILI, P.A.

First find of pliocene flora in the Northern Caucasus. Dokl.
AN SSSR 116 no.5:845-846 0 '57. (MIRA 11:2)

1. Krasnodarskiy filial Vsesoyuznogo neftegazovogo nauchno-
issledovatel'skogo instituta i Sektor paleobiologii AN GruzSSR.
Predstavleno akademikom S.I. Mironovym.
(Caucasus, Northern--Paleobotany)

20-114-3-48/60

AUTHOR: Mchedlishvili, P. A.

TITLE: On the Age of the Floras of Amvrosiyevka and Krynka. in Connection With New Data Concerning the Tortonian Flora in the Environs of L'vov (Lemberg) (O vozraste flor Amvrosiyevki i Krynki v svyazi s novymi dannymi o Tortoniskoy flore okrestnostey g. L'vova)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 114, Nr 3, pp 627-630 (USSR)

ABSTRACT: In the Tortonian flora, discovered around the turn of the century in the rich source of discoveries of Kortumovaya mountain near L'vov, deciduous species are predominant, but the major part of them belongs to species preferring warm climate. Nevertheless, also narrow-leaved evergreen plants play here an important part. The flora of L'vov reflects conditions that are related to the dry subtropic climate. This is in no way contradictory to the occurrence of elements preferring humidity, e.g. of Pterocarya. These latter elements only indicate the presence of some humid phytological areas. Judging from their lithological characteristics, the rests of plants belong to the lower and intermediate parts of the Upper Tortonium, and

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On the Age of the Floras of Amvrosiyevka and Krynka in Connection With New Data Concerning the Tortonian Flora in the Environs of L'vov

in any case they are older than the Conch level. From the point of view of its overall composition and of its ecological type, the flora of L'vov is identical with the flora of the Western Ukraine (Mishin and Dzhurov), but the former has more species. If compared to Lower Tortonium, all Upper Tortonian floras point to the climate becoming warmer and being desiccated. Very significant is a distinct uniform modification in the climate in Intermediate Miocene of the Black Sea and Caspian Sea area. It would be natural to conclude therefrom that a uniform process of climatic change embraced simultaneously Central Europe and the area just mentioned. An analysis of the flora of L'vov and of its position with respect to the Karaganskiy level leads to still more fundamental conclusions: the fact that the floras of L'vov and of Amvrosiyevka (Northern Azov area) are undoubtedly the same proves that their ages are identical. As, by accepting this conclusion, it is denied that the latter flora belongs to the Sarmatian period (this applies also to the flora of Krynka), it is necessary to reappraise critically all Intermediate and Upper Miocene floras of the southern part of the USSR, which originally had been attributed to the "Sarmatian" age of the mentioned villages. This reappraisal has become

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On the Age of the Floras of Amvrosiyevka and Krynka in Connection With New
Data Concerning the Tortonian Flora in the Environs of L'vov

particularly urgent as a result of the latest data given by
Krishtofovich, these data being in sharp contradiction with
his own former concepts on the historical development of the
tertiary floras in the sense of the concept of the "Turgay"
and of the "Poltava" floras. There are 14 references, 13 of
which are Soviet.

ASSOCIATION: Department of Paleobiology AS Gruzian SSR
(Sektor paleobiologii Akademii nauk GruzSSR)
PRESENTED: December 20, 1956, by S. I. Miznov, Member of the Academy
SUBMITTED: December 20, 1956

Card 3/3

SOV/20-124-2-42/71

3(0)
AUTHOR:

Mchedlishvili, P. A.

TITLE:

On the Age of the Coal-Bearing Sediments of the Dilizhan District in Armenia (O vozraste uglenosnykh otlozheniy Dilizhanskogo rayona Armenii)

PERIODICAL:

Doklady Akademii nauk SSSR, Vol 124, Nr 2, pp 390 - 391 (USSR), 1959

ABSTRACT:

In the environments of the resort of Dilizhan continental deposits are strongly developed which contain brown coal beds of considerable thickness. According to their stratigraphic position these sediments certainly belong to the Tertiary, their age, however, has not yet been precisely determined. According to the well preserved leaf residues (collected by O. A. Aslanyan, 1957) from these strata 13 plant varieties were determined. According to these determinations the flora complex is mainly represented by evergreen elements of the tropical and subtropical type. The climate is supposed to have been hot and dry in this region. The summer-green forms of *Ostrya* and *Rhamnus* are not in contradiction with this conclusion. They accompany fossil and subtropical

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Dilizhan District in Armenia

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floral elements in a quite usual way. According to its composition and the ecological character the Dilizhan brown coal flora resembles the European Middle-Oligocene floras (Refs 6,8). There is a striking similarity between this flora and the Middle-Oligocene floras of the Zakavkaz'ye (Transcaucasia, Refs 1-4). All floras mentioned are characterized from the genetic and ecological point of view by a strong monotony and indicate an arid and hot climate. Their species agree in almost all cases. Differences are expressed only in the quantitative interrelations between the representatives of individual genera. Thus, the flora of Dilizhan brown coal can be placed to the Middle Oligocene. The occurrence of *Eugenia Bogatschevii* (Lower Oligocene, Ref 5) is no reason to regard the Dilizhan flora as being older. This species has simply a wider vertical distribution as has hitherto been assumed. The Lower Oligocene floras do not contain - apart from rare exceptions - small-leaved xerophytic plants which were found in the Dilizhan flora. They reflect a much more humid climate. Moreover, a differentiation of climatic conditions in the direction of the latitude becomes

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On the Age of the Coal-Bearing Sediments of the
Dilizhan District in Armenia

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obvious in the Lower Oligocene. A further confirmation of the Middle-Oligocene age of the Dilizhan flora is the occurrence of a single species of the chestnut-oak (*Dryophyl-
lum curticeleense*). Its vertical distribution is discussed in detail. In addition, the author concludes from the above age determination that the coal formation in the Dilizhan district (Armenia) and in the Akhaltsikh district (Gruziya) took place under similar conditions and approximately at the same time, perhaps somewhat earlier in Armenia. There are 8 references, 6 of which are Soviet.

ASSOCIATION: Institut paleobiologii Akademii nauk GruzSSR (Institute of Paleobiology, Academy of Sciences, Gruzinskaya SSR)

PRESENTED: August 14, 1958, by A. M. Yanshin, Academician

SUBMITTED: August 7, 1958

Card 3/3

MCHEDLISHVILI, P.A.

Recent data on the Tertiary flora of North Vietnam. Dokl. AN SSSR
135 no.3:694-697 II '80. (MIRA 13:12)

1. Institut paleobiologii Akademii nauk GruzSSR. Predstavleno akad.
A.L. Yanshinym. (Vietnam, North--Paleobotany, Stratigraphic)

MCHEDLISHVILI, P.A.

Paleobiological foundations of the origin of angiosperms.

Trudy Inst. paleobiol. AN Gruz. SSR no.6:97-121 '61.

(MTRA 15:3)

(Angiosperms) (Plants--Evolution)

MCHEDLISHVILI, P.A.

"Frondiferous mosses from Permian sediments of the Angara continent"
by P.A.Neiburg. Reviewed by P.A.Mchedlishvili. Izv.AN SSSR Ser.
geol.26 no.12:109-111 D '61. (MIRA 14:12)
(Mosses, Fossil)
(Neiburg, P.A.)

CHENISHVILI, S.A.

Continuity of functions of two variables. *Sov. Akad. Nauk. SSSR* 1964, no. 3: 527-529. 1964. (MIA 843)

1. Tbilisskiy gosudarstvennyy universitet. Submitted February 10, 1964.

MCHEDLISHVILI, S.A.

Theorem devised by D.F.Egorov. Soob. AN Gruz. SSR 38 no.1:3-6
Ap '65. (MIRA 18:12)

1. Tbilisskiy gosudarstvennyy universitet. Submitted June 4,
1964.

MCHEDLISHVILI, T.Z., inzhener; KARAKHANOV, L.M., inzhener.

Mechanization of hedge type pruning of tea plants. Sel'khoz mashina
no.11:17-20 N '55. (MLRA 9:1)

1.GSKB po chayyu.
(Agricultural machinery) (Pruning)

MCHELISHVILI, V. A.

V. A. Mchelishvili and A. M. Samarin, Izucheniye raskisleniya stali silikomargantsem
/A Study of Manganese-Silicon Reduction of Steel/, Press of the Academy of Sciences
USSR, 3.5 sheets, 3,000 copies.

This work describes investigations on dissolving nonmetallic contents of steel by means of manganese-silicon (preliminarily and during the smelting process) and shows that improving the quality of steel depends on the reduction (dissolving) process.

The work is intended for scientific and technical workers of the metallurgical industry.

SO: U-6472, 12 Nov 1954

MCHEDLISHVILI, V. A.

PHASE I

TREASURE ISLAND BIBLIOGRAPHICAL REPORT

AID 467 - I

BOOK

Authors: MCHEDLISHVILI, V. A. and SAMARIN, A. M. Call No.: TN730.M36

Full Title: STUDY OF DEOXYDIZING STEEL WITH SILICON-MANGANESE AS DEOXIDIZER

Transliterated Title: Izucheniye raskisleniya stali silikomargantsem PUBLISHING DATA

Originating Agency: Academy of Sciences of the USSR

Publishing House: Academy of Sciences, USSR, Institute of Metallurgy im. A. A. Baykov

Date: 1953

No. pp.: 38

No. of copies: 4,000

Editorial Staff: None

PURPOSE: This booklet gives experimental data which may be applied as the basis for proper determination of the best composition of the silicon and manganese alloys used for the deoxidation of steel.

TEXT DATA

Coverage: This booklet gives the description and results of experimental tests made to determine the influence of the composition of silico-manganese deoxidizers used for preliminary deoxidation of steel on 1) the amount of impurities as non-metallic inclusions remaining in the finished steel, 2) the composition and size of those non-metallic inclusions, and 3) the characteristics and mechanical properties of steel. Many photos and tables supplement the text.

Izucheniye raskisleniya stali silikomargantsem

AID 467 - I

No. of References: 10, all Russian (1915-1951)

Facilities: None

2/2

ACHEDLISHVILI, V.A.

(2)
Evaluation of the results of determining oxygen content in steel by the chemical method and by vacuum fusion. V.A. Mchedlishvili and A. M. Samarin. *Izvest. Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk* 1953, 378-82. — It is shown that although the vacuum fusion method gives results for O in steel that agree with those obtained by calcn. from the analytical data on nonmetallic inclusions as obtained by anodic soln. of the steel, the best results from the vacuum method are obtained only when the procedure is selected in accordance with the nature and content of oxide inclusions. In a series of samples contg. 0.005-0.012% O it was shown that the results of the 2 methods give ratios ranging from 0.75 to 1.20. Usually the vacuum method gives lower results. Increased content of free or combined alumina generally leads to increased deviation in the 2 methods.

G. M. Kogolapoff

MCHEDLISHVILI, VA

✓ Oxygen in Steel During the Process of Syphon Casting.
V. A. Mchedlishvili and A. M. Samarin. (Investigation conducted
Nauk SSSR, O.T.N., 1956, No. 8, 198-110). [In Russian].
The results of an investigation of changes in the oxygen
content of steel during its deoxidation, casting, and rolling.

of

MCHEDLISHVILI, V.A., LYUBIMOVA, G.A., SAMARIN, A.M.

"Interaction of Sulphur and Manganese in Solid Iron,"
lecture given at the Fourth Conference on Steelmaking, A.A. Baikov Institute of
Metallurgy, Moscow, July - 1-6, 1957

MCHEDLISHVILI, V. A.

137-1958-1-394

Translation from: Referativnyy zhurnal, Metallurgiya 1958, Nr 1, p 62 (USSR)

AUTHORS: Mchedlishvili, V. A., Samarin, A. M.

TITLE: Variation in Nonmetallic Inclusions During the Process of Melting and Pouring Steel Deoxidized by Manganese and Silicon (Izmeneniye nemetallicheskih vklyucheniye v protsesse plavki i razlivki stali, raskislennoy margantsom i kremniyem)

PERIODICAL: V sb.. Fiz.-khim. osnovy proiz-va stali. Moscow, AN SSSR, 1957, pp 650-655

ABSTRACT: Variation in [O] and in nonmetallic inclusions in the metal from the moment of deoxidation to the finished rolled product was investigated in twelve heats of 36G2S and 20P steel in a 130-t open hearth furnace. Deoxidation in the furnace was by Si-Mn grades 17 and 20, 500-700 kg for 20P steel and 2.0-2.5 t for 36G2S, and the heats were left there for 10-12 and 15-25 minutes, respectively, with deoxidation in the ladle by 45% Fe-Si and by Al, 800 and 500 kg/t, respectively, until the specified analysis was attained. The nonmetallic inclusions segregated from the steel by electrolysis were subjected to microcrystalloscopic, spectroscopic, and petrographic investigation, in addition to which

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137-1958-1-394

Variation in Nonmetallic Inclusions During the Process of Melting (cont.)

heat tinting was used to determine the nature of sections thereof. It was found that, prior to deoxidation, solidified steel with 0.021% [O] contains only oxysulfides of Fe with a small amount of Mn in solution in the liquid steel. After deoxidation and before pouring, two types of nonmetallic inclusions were found in the steel: highly dispersed particles of FeS with a little MnS, and droplet silicates -- chiefly manganese orthosilicates of Ca, containing more than 10% Ca, more than 10% Si and Mn, and less than 10% Fe. It is observed that [O] diminished to 0.0081 in 36G2S steel at the moment of pouring owing to flotation of the nonmetallic inclusions, while in 20P the figure was only 0.0154%. This is to be explained by the fact that in the second case the steel was not left in the furnace long enough for uniform distribution of Si Mn. Three types of nonmetallic inclusions were found in ladle samplings: highly-dispersed Fe and Mn sulfides, particles of corundum, droplet silicates, and silicate glass containing corundum crystals, more of the latter being found in 20P than in 36G2S steel. Specimens taken from the finished steel showed corundum crystal particles, chiefly in the 20P steel, and elongated Mn - Al Fe - Ca silicates with MnS in solution or as films. The diminution in [O] was found to occur during the pour -

Card 2/3

137-1958-1-394

Variation in Nonmetallic Inclusions During the Process of Melting (cont.)

to 0.0039 for 20P steel and to 0.0038% for 36G2S steel is explained by the flotation of nonmetallic inclusions out of the liquid steel in the molds and runner boxes. It is noted that the oxides and sulfides existing separately in liquid steel, the latter being in solution, form complex oxysulfides during the cooling of 6-t ingots and in heating for rolling, all the S being absorbed to form MnS.

Bibliography. 12 references

A.Sh.

1. ~~Steel--Impurities--Analysis~~
2. ~~Steel--Deoxidation--Test results~~
3. ~~Manganese--Applications~~
4. ~~Silicon--Applications~~
5. ~~Steel--Manufacture~~

Card 3/3

MCZEDLISZWILI, W. A.

PRACE INSTYTUTOW MINISTERSTWA HUTnictwa
Nr 9, 1957

Card 1/2

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MCZEDLISZWILI, W. A.; SAMARIN, A. M. 27

Effect of Deoxidation by Silico-Manganese of Optimum Composition on Steel Properties 18

Large scale experiments have been made to establish the best method of preliminary deoxidation of steel in the open hearth process which had for aim to obtain

when the ratio Mn : Si = 6 or 7.

In the second part of the work which was conducted on an industrial scale (open hearth furnaces of 130 t) for preliminary deoxidation ferromanganese of optimum composition was used (Mn : Si = 6) and for comparison also ordinary silico-manganese

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MOZEDLISWILI, W. A.; SAMARIN, A. M.

Effect of Deoxidation by Silico-Manganese of Optimum Composition on Steel Properties of standard composition (Mn : Si = 3,5). Final deoxidation was made by 45 per cent ferro-silicon and aluminum. As in the first part of the work, the aim of investigations was to determine: the amount and the nature of inclusions and mechanical properties of the finished steel. Two experimental types of steel were prepared: alloyed steel 36G2S and carbon steel 20P. 6-ton ingots were rolled at conventional temperatures to sections of 100 sq. mm. (20P steel) or 140 mm in dia. (36G2s steel). Examination of inclusions was made by means of microcrystalloscopic, spectrosopic and petrographic methods.

Results of these industrial scale investigations in principle are in agreement with laboratory experiments. Main factors which determine the amount of inclusions and the oxygen content in finished steel are the fluidity and melting temperature of

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033210008-3

the preliminary deoxidation is made by silicon-manganese of the composition ratio

Mn : Si = 6.

for BB and

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033210008-3"

M. A. Meredizawa, W. A.
Distr: 4E2c

Influence of the chemical composition of deoxidizer iron
manganese-silicon-aluminum on the quantity and chemical
composition of nonmetallic inclusions in steel. *27*
W. A. Meredizawa, and A. *10*
Guzik, Poland. *Inst. Met.*

ALUMINUM STEEL

P. J. H. H. H.

cm 12 11

MCZEPLISZWILL W. A.

Inst. Metallurgy, Min. Metallurgy, Gliwice,
Poland

Comparison of two methods of a preliminary isolation of
inclusions of oxides of low-carbon steels by electrolysis.
J. Forst, J. Orzechowska, and W. A. Mczepliszwill (Inst.
Met., Gliwice, Poland). *Polish Inst. Metallurgy, Gliwice*

13

...method of size and definition...

...T. F. Hengst...

DM BE 11

AUTHOR: Mchedlishvili, V.A. SOV/32-24-10-1/70

TITLE: A Comparative Criticism of the Methods for Determining Oxide Inclusions in Steel (Sravnitel'naya otsenka metodov otre-deleniya oksidnykh vklyucheniye v stali)

PERIODICAL: Zavodskaya Laboratoriya, 1953, Vol 24, Nr 10, pp 1171-1178 (USSR)

ABSTRACT: The quantitative separation of oxide inclusions is carried out in two operations: the nonmetallic ingredients are separated from the ferrite base of the steel, then the oxides are separated from the other components of this nonmetallic residue. The electrolytic dissolution of steel according to Klinger-Koch (Klinger-Kokh) (Refs 1, 2), in its original

SOV/32-14-10-1/70

A Comparative Criticism of the Methods for Determining Oxide Inclusions
in Steel

residue which is connected with it is, however, assumed to take place according to the second method. This assumption is disproved in the present case. Samples of a halfkilled Armc (Arnko) iron were used in the comparative experiments. The composition of the metal is given in the tables as well as a drawing of the plant according to Klinger-Koch. The microscopic investigation of the oxides which were investigated according to two methods showed that the form is the same in either case. The dressing methods of the carbides may be divided into three groups: the acid, the saline, and the haloid methods. The method according to Dickenson (Dikkenson) (Ref 11), which can, however, be used only rarely, is included among the acid methods. Microscopic investigations by Klinger and Koch (Ref 6) showed that in the case of a treatment of the anodic residue with chlorine the oxides can be separated from the other components in their natural shape. Proceeding from this knowledge the extraction of the oxides was carried out in the present case according to the chlorine method. A diagram and description of the chlorine vacuum plant are given as well as a table of the obtained results. According to the obtained experimen-

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A Comparative Criticism of the Methods for Determining Oxide Inclusions
in Steel

tal results it was found that the method according to
Klinger and Koch and those according to Fitterer-Lukashevich-
Duvanova are equivalent; the latter is, however, simpler.
The moist carbide dissociation methods are not favorable
whereas the chlorine method is mentioned as the most reliable
one. There are 5 figures, 2 tables, and 24 references, 7 of
which are Soviet.

ASSOCIATION: Institut metallurgii im. A. A. Baykova Akademii nauk SSSR
(Institute of Metallurgy imeni A. A. Baykov, AS USSR)

Card 3/3

MCHEDLISHVILI, Vakhtang Aleksandrovich; LYUBIMOVA, Galina Aleksandrovna;
SAMARIN, Aleksandr Mikhaylovich; ZARVIN, Ye.Ya., red.; ROZEN-
TSVEYG, Ya.D., red.izd-va; EVENSON, I.M., tekhn.red.

[Role of manganese in preventing the harmful effect of sulfur
on the quality of steel] Rol' margantsa v ustraneni vrednogo
vliianiia sery na kachestvo stali. Moskva, Gos.nauchno-tekhn.
izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1960. 53 p.
(MIRA 13:5)

(Manganese)

(Steel--Metallurgy)

SCN/6553
SCN/26-3-5

PLATE 1: BOOK EXPOSITION

1941-1942. 1943-1944. 1945-1946. 1947-1948. 1949-1950. 1951-1952. 1953-1954. 1955-1956. 1957-1958. 1959-1960. 1961-1962. 1963-1964. 1965-1966. 1967-1968. 1969-1970. 1971-1972. 1973-1974. 1975-1976. 1977-1978. 1979-1980. 1981-1982. 1983-1984. 1985-1986. 1987-1988. 1989-1990. 1991-1992. 1993-1994. 1995-1996. 1997-1998. 1999-2000. 2001-2002. 2003-2004. 2005-2006. 2007-2008. 2009-2010. 2011-2012. 2013-2014. 2015-2016. 2017-2018. 2019-2020. 2021-2022. 2023-2024. 2025-2026. 2027-2028. 2029-2030. 2031-2032. 2033-2034. 2035-2036. 2037-2038. 2039-2040. 2041-2042. 2043-2044. 2045-2046. 2047-2048. 2049-2050. 2051-2052. 2053-2054. 2055-2056. 2057-2058. 2059-2060. 2061-2062. 2063-2064. 2065-2066. 2067-2068. 2069-2070. 2071-2072. 2073-2074. 2075-2076. 2077-2078. 2079-2080. 2081-2082. 2083-2084. 2085-2086. 2087-2088. 2089-2090. 2091-2092. 2093-2094. 2095-2096. 2097-2098. 2099-2100. 2101-2102. 2103-2104. 2105-2106. 2107-2108. 2109-2110. 2111-2112. 2113-2114. 2115-2116. 2117-2118. 2119-2120. 2121-2122. 2123-2124. 2125-2126. 2127-2128. 2129-2130. 2131-2132. 2133-2134. 2135-2136. 2137-2138. 2139-2140. 2141-2142. 2143-2144. 2145-2146. 2147-2148. 2149-2150. 2151-2152. 2153-2154. 2155-2156. 2157-2158. 2159-2160. 2161-2162. 2163-2164. 2165-2166. 2167-2168. 2169-2170. 2171-2172. 2173-2174. 2175-2176. 2177-2178. 2179-2180. 2181-2182. 2183-2184. 2185-2186. 2187-2188. 2189-2190. 2191-2192. 2193-2194. 2195-2196. 2197-2198. 2199-2200. 2201-2202. 2203-2204. 2205-2206. 2207-2208. 2209-2210. 2211-2212. 2213-2214. 2215-2216. 2217-2218. 2219-2220. 2221-2222. 2223-2224. 2225-2226. 2227-2228. 2229-2230. 2231-2232. 2233-2234. 2235-2236. 2237-2238. 2239-2240. 2241-2242. 2243-2244. 2245-2246. 2247-2248. 2249-2250. 2251-2252. 2253-2254. 2255-2256. 2257-2258. 2259-2260. 2261-2262. 2263-2264. 2265-2266. 2267-2268. 2269-2270. 2271-2272. 2273-2274. 2275-2276. 2277-2278. 2279-2280. 2281-2282. 2283-2284. 2285-2286. 2287-2288. 2289-2290. 2291-2292. 2293-2294. 2295-2296. 2297-2298. 2299-2300. 2301-2302. 2303-2304. 2305-2306. 2307-2308. 2309-2310. 2311-2312. 2313-2314. 2315-2316. 2317-2318. 2319-2320. 2321-2322. 2323-2324. 2325-2326. 2327-2328. 2329-2330. 2331-2332. 2333-2334. 2335-2336. 2337-2338. 2339-2340. 2341-2342. 2343-2344. 2345-2346. 2347-2348. 2349-2350. 2351-2352. 2353-2354. 2355-2356. 2357-2358. 2359-2360. 2361-2362. 2363-2364. 2365-2366. 2367-2368. 2369-2370. 2371-2372. 2373-2374. 2375-2376. 2377-2378. 2379-2380. 2381-2382. 2383-2384. 2385-2386. 2387-2388. 2389-2390. 2391-2392. 2393-2394. 2395-2396. 2397-2398. 2399-2400. 2401-2402. 2403-2404. 2405-2406. 2407-2408. 2409-2410. 2411-2412. 2413-2414. 2415-2416. 2417-2418. 2419-2420. 2421-2422. 2423-2424. 2425-2426. 2427-2428. 2429-2430. 2431-2432. 2433-2434. 2435-2436. 2437-2438. 2439-2440. 2441-2442. 2443-2444. 2445-2446. 2447-2448. 2449-2450. 2451-2452. 2453-2454. 2455-2456. 2457-2458. 2459-2460. 2461-2462. 2463-2464. 2465-2466. 2467-2468. 2469-2470. 2471-2472. 2473-2474. 2475-2476. 2477-2478. 2479-2480. 2481-2482. 2483-2484. 2485-2486. 2487-2488. 2489-2490. 2491-2492. 2493-2494. 2495-2496. 2497-2498. 2499-2500. 2501-2502. 2503-2504. 2505-2506. 2507-2508. 2509-2510. 2511-2512. 2513-2514. 2515-2516. 2517-2518. 2519-2520. 2521-2522. 2523-2524. 2525-2526. 2527-2528. 2529-2530. 2531-2532. 2533-2534. 2535-2536. 2537-2538. 2539-2540. 2541-2542. 2543-2544. 2545-2546. 2547-2548. 2549-2550. 2551-2552. 2553-2554. 2555-2556. 2557-2558. 2559-2560. 2561-2562. 2563-2564. 2565-2566. 2567-2568. 2569-2570. 2571-2572. 2573-2574. 2575-2576. 2577-2578. 2579-2580. 2581-2582. 2583-2584. 2585-2586. 2587-2588. 2589-2590. 2591-2592. 2593-2594. 2595-2596. 2597-2598. 2599-2600. 2601-2602. 2603-2604. 2605-2606. 2607-2608. 2609-2610. 2611-2612. 2613-2614. 2615-2616. 2617-2618. 2619-2620. 2621-2622. 2623-2624. 2625-2626. 2627-2628. 2629-2630. 2631-2632. 2633-2634. 2635-2636. 2637-2638. 2639-2640. 2641-2642. 2643-2644. 2645-2646. 2647-2648. 2649-2650. 2651-2652. 2653-2654. 2655-2656. 2657-2658. 2659-2660. 2661-2662. 2663-2664. 2665-2666. 2667-2668. 2669-2670. 2671-2672. 2673-2674. 2675-2676. 2677-2678. 2679-2680. 2681-2682. 2683-2684. 26

metallurgiya, metallorodeniye, fiziko-khimicheskiye metody issledovaniya (Physicochemical Research Methods in Metallurgy and Metal Science) Moscow, Izdat. AN SSSR, 1960. 251 p. (Series: Iss. Izv. Ser. 5) Errata slip inserted. 2,600 copies printed.

Институт металлургии имени А.А. Байкалова.

Resp. Ed.: I. P. Bardin, Academician (Deceased); Ed. of Publishing House:
Sponsoring Agency: Akademiya Nauk SSSR.

PURPOSE: This collection of articles is intended for metallurgists and metal researchers.

CONTENTS: The collection contains articles on metallurgy, metal science, and physicochemical research methods. Separate articles discuss the structure and properties of some metals and alloys. The effect of cold treatment and incisions on the properties of alloys are analyzed, and instruments and

16
Balkov, I.S., and A.M. Gamarin. Study of the Sulfur Absorption Capacity of Magnesium Oxide and Calcium Oxide

Forrest, R. Z., V.A. Ricks-Gilmer, and A.M. Samarin. Effect of Decarboxylation on the Properties of a Castable Alloy of Manganese, Silicon, and Aluminum on the Content and Distribution of Oxide Inclusions in Gases.

Klimbaitov, A. Ia. On the Problem of Utilizing the Results of Mechanical Tests for Evaluating the Technology of Smelting and Casting of Steel

Zagayanskaya, A. L. On the Sequence of Crystallization of α - and β -Forms and Sublimes in One Direction in α -Form.

Variety. 1.3. Relation of Coefficients of Radiant-Heat Emission and Radiant-Spot Zeroing and a Nonzero for Determining These Coefficients

Baglin, V. S. On the Theory of Production of Lead Dep. Sci. in the Institute of Geology and Mineral-ore Smelting and Metallurgy, 1954, No. 10.

Magblin, F.S. Utilization of Sulfur Dioxide at Nonferrous Metallurgical Plants

Prants, G.S., and Ya. I. Danilova. Interaction of Sulfur Dioxide with
Pre-oxidized Sulfides of Some of the Nonferrous Metals

Al'tabular O.V., and G.M. Zviadze. Interaction of Selenium With
Thymidine Nucleotides

Drits, N. Ye., Z.A. Syrdembayev, and L.I. Kobelin. Study of the Nature of the Manganese Phase of Some Magnesium-Nickel Alloys

* Svidlerakaya, Z.A., and A.A. Vashchenko. Effect of Cold Work on the Properties of Aluminum-Copper and Aluminum-Copper-Magnesium Alloys Under Various Aging Conditions

Pavlov, I.M., and V.Ye. Mezis. Dependence of Metal Hardness on Degree of Deformation Slight During Cold Hardening

Parlov, I.M., and V. Ya. Moise. Dependence of Tensile Strength, Maximum Yield Point, and Specific Elongation on Sign Change of Plastic Deformation.

"Pavlov, I.M., and V. Ya. Mails. Dependence of the Microstructure of a Metal on Changes in the Plastic Deformation Stage

Osipov, V.O. Final Deformations of Simple Shear

Korailov, I.I., and E.S. Polyakova. Study of the Heat Resistance of Platinum Alloys with Nickel, Ir, Palladium, Ruthenium, Chromium, and Aluminum, by the Bending Method

Oron-Othman, N.Y., and V.O. Gromova. Feasibility Curve of the
 $\frac{W}{F} \rightarrow C_r \rightarrow \text{No System}$

FORYST, Yu.T.; MCHEDLISHVILI, V.A.; SAMARIN, A.M.

Effect of deoxidation by a complex alloy of manganese silicon and
aluminum on the content and composition of oxide inclusions in
steel. Trudy Inst.met. no.5:22-35 '60. (MIRA 13:6)
(Steel alloys--Metallurgy)

SAMARIN, A.M.; MCHEDLISHVILI, V.A.; LYUBIMOVA, G.A.

Effect of the thermal treatment on the processes of anodic
solution of ball-bearing steel. Zav.lab. 26 no.9:1052-1055
'60. (MIRA 13:9)

1. Institut metallurgii im. A.A.Baykova Akademii nauk SSSR.
(Steel--Heat treatment)
(Steel--Analysis)

S/032/60/025/011/006/035
B015/B066

AUTHORS: Mchedlishvili, V. A., Lyubimova, G. A., and Samarin, A. M.

TITLE: Method of Electrolytic Dissolution of Stainless Steel 18

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol. 26, No. 11,
pp. 1212-1219

TEXT: The methods described in publications (Refs. 1-4) for electrolytic dissolution of stainless steel and high-chromium steels for isolating carbides and nonmetallic inclusions are inappropriate. When checking the method of N. A. Saverina (Ref. 2) N. M. Popova, A. F. Platonova, and K. P. Leonova (Ref. 5) found that at high current densities a dissolution of the carbides and a considerable contamination of the anode deposits occur. The authors of the present paper checked the methods of Refs. 1 and 2 for the isolation of oxide inclusions in steels of the 1X18H9 (1Kh18N9) and 1X18H9T (1Kh18N9T) types and also noted that the anode deposits were appreciably contaminated. They further studied the electrolytic method devised by Klinger and Koch (Refs. 6,8) on an

Method of Electrolytic Dissolution of
Stainless Steel

S/032/60/026/011/006/035
B015/B066

electrolyzer of simpler design and determined the optimum compositions of the catholyte and the anolyte as well as the operational conditions. The most suitable current density was found to be at $0.03 - 0.05 \text{ a/cm}^2$, if a neutral anolyte with 5% KCNS + 1% sodium citrate + 0.08% As_2O_3 and a catholyte consisting of 5% sodium citrate acidified with citric acid to give a pH = 2.5 - 3 are used in the flow-system. Under these conditions a uniform dissolution of the steel sample is attained and no by-products are formed. A good isolation of the carbide fraction is achieved. The X-ray structure analysis of the carbide deposit of the two steels mentioned above shows that they consist of $(\text{Cr}, \text{Fe})_{23}\text{C}_6$ and/or carbides enriched in titanium. A chemical analysis of the oxide inclusions obtained from an anode deposit of 1Kh18N9 steel which had been treated with chlorine, shows that mainly SiO_2 and Al_2O_3 occur which is in agreement with the results of the vacuum melting. There are 5 figures, 3 tables, and 12 references: 8 Soviet and 4 German.

ASSOCIATION: Institut metallurgii im. A. A. Baykova Akademii nauk SSSR
(Institute of Metallurgy imeni A. A. Baykov of the Academy
of Sciences of the USSR)

SAMARIN, A.M. (Moskva); MCHEDLISHVILI, V.A. (Moskva)

Properties of oxides in iron-chromium alloys. Izv. AN SSSR.
Otd. tekhn. nauk. Met. 1 topl. no.4:50-52 JI-Ag '61. (MIRA 14:8)
(Iron-chromium alloys--Metallography)

GOAN' AN'-MIN' (Moskva); MCHEDLISHVILI, V.A. (Moskva); SAMARIN, A.M. (Moskva)

Process of steel deoxidation by complex alloys of silicon, manganese, and aluminum. Izv.AN SSSR. Otd.tekh.nauk. Met.i topl.
no.4:31-39 J1-Ag '62. (MIRA 15:8)
(Steel--Metallurgy)

S/148/62/000/005/001/009
E071/E135

AUTHORS: Vertman, A.A., Mchedlishvili, V.A., and Samarin, A.M.

TITLE: The influence of deoxidation on the viscosity of molten iron

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, no.5, 1962, 34-36

TEXT: The effect of deoxidation of steel by a deoxidising element depends to a considerable extent on the velocity of flotation of products of the deoxidising reaction. Since there are no direct methods of measuring the velocity of flotation of non-metallic inclusions from a liquid metal, the authors attempted to evaluate this velocity from results of changes in the kinematic viscosity of liquid iron during its deoxidation with silicon and aluminium. The viscosity was determined from the torsional vibrations of a cylinder filled with the liquid investigated. The experiments were carried out at 1600 °C with additions of 0.1 and 1.0% Si and 0.5 and 1.0% Al to armco iron, in an atmosphere of purified helium in a furnace with graphite heating elements, so as to exclude the possibility of reoxidation. ✓
Card 1/2

The influence of deoxidation on ... S/148/62/000/005/001/009
E071/E135

In all the experiments addition of the deoxidant resulted first in an increase of the viscosity, due to heterogenisation of the liquid metal caused by the formation of deoxidation products; this was followed by a steady decrease in viscosity which approached its initial value for pure iron. The time taken to reach the initial viscosity after the addition of a deoxidant can serve as a measure of the velocity of flotation of deoxidation products. The duration of flotation of products formed on the addition of 0.5 and 1% Al was 2-3 minutes. On adding 0.1% Al the velocity of flotation decreased considerably: the initial viscosity was not attained after a considerable time (25 minutes). Addition of 1% Si had a similar effect; on adding 0.1% Si the velocity of flotation is considerable, after about five minutes the deoxidation products were removed. This confirms that the deoxidation with large quantities of aluminium is more effective than deoxidation with silicon or small additions of aluminium. There are 2 figures.

ASSOCIATION: Institut metallurgii AN SSSR
Card 2/2 (Institute of Metallurgy, AS USSR)
SUBMITTED: October 4, 1961

VOLKOV, S.Ye.(Moskva); MEHEDLISHVILI, V.A. (Moskva); SAMARIN, A.M. (Moskva)

Wettability of corundum and silica glass by iron-silicon melts.

Izv. AN SSSR.Otd. tekhn.nauk. Met. i topl. no.5:69-73 S-O '62.

(MIRA 15:10)

(Liquid metals)

(Surface tension)

S/020/62/143/001/027/030
B101/B147

AUTHORS: Mchedlishvili, V. A., Samarin, A. M., Corresponding Member
AS USSR

TITLE: Oxide inclusions in iron - vanadium alloys

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 143, no. 1, 1962,
159 - 161

TEXT: The authors studied deoxidation products forming in liquid electrolytic iron on the addition of vanadium of 0.064, 0.13, 0.18, 0.25, and 0.85 % V was added in the form of ferrovanadium. Samples taken between 1560 and 1580° C were electrolytically dissolved, and the anodic deposit was studied microscopically and radiographically. Results: (1) On increasing the V content to 0.18 %, the shape of oxide inclusions changes from irregular and globular to clearly rhombic and octahedral forms. At 0.25 % V, only rhombic and rectangular forms were observed. (2) The particles are highly magnetic at <0.25 % V, and nonmagnetic at >0.25 % V. The radiographic lines of these two groups differ. (3) Calculations of

Card 1/2

Oxide inclusions ...

S/020/62/143/001/027/030
B101/B147

interplanar spacings showed the structure of inclusions with $<0.25\%V$ to be that of vanadium spinel, FeV_2O_4 , with isomorphic substitution of $V : Fe^{2+}(Fe^{3+}, V^{3+})_2O_4$. At a very low V content, the structure of the inclusions is similar to that of Fe_3O_4 which explains their magnetic properties. At $>0.25\%V$, the structure of inclusions is almost identical with that of V_2O_3 . There are 1 figure, 1 table, and 2 references:

1 Soviet and 1 non-Soviet. The reference to the English-language publication reads as follows: Cumulative Alphabetical and Grouped Numerical Index of X-Ray Diffraction, Philadelphia, 1953.

SUBMITTED: November 18, 1961

Card 2/2

MCHEDLISHVILI, V.A.; SAMARIN, A.M.

Comparative evaluation of the rate of removal from liquid iron of oxide inclusions formed during the deoxidation by aluminum and silicon. Trudy Inst. met. no.14:29-49 '63.

(MIRA 17:8)

1. Chlen-korrespondent AN SSSR; otvetstvennyy redaktor zhurnala "Trudy Instituta metallurgii" (for Samarin).

L 16939-63

EWP(q)/EWT(m)/BDS AFFTC/ASD Fq-4 WH/JD
S/020/63/149/005/014/018

63

AUTHOR: Volkov, S. Ye., Mchedlishvili, V. A. / and Corresponding Member of
the Academy of Sciences USSR A. M. Samarin

TITLE: Wettability of corundum and quartz glass by iron-manganese compounds

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 149, no. 5, 1963, 1131-1133

TEXT: By determining the adhesion of molten ferromanganic alloys to corundum and quartz glass, the authors attempted to evaluate the interphase tension at the interface of the investigated systems. The determinations were performed at 1,550°C by the sessile drop method in a helium atmosphere, using iron containing 0.001-0.002% C, 0.002% S, 0.002% N, and traces of Si, Cu, and Mn, and electrolytic manganese containing not more than 0.1% impurities. It was established that the surface tension of molten iron decreases with increasing content of manganese. The adhesion of iron-manganese melts to corundum is lower than to quartz glass, owing to the greater difference in the values of interphase tension at the metal-oxide boundary, i.e., $\sigma_{1,2}(\text{SiO}_2) \ll \sigma_{1,2}(\text{Al}_2\text{O}_3)$. With increasing content of manganese the adhesion of molten iron to corundum increases owing to the preferential adsorption of manganese from the metallic solution to the surface of the oxide. As the content of manganese increases, the adhesion of iron-manganese melts to quartz glass at first increases but later decreases. There is 1 figure.

GABISIANI, A.G.; MCHEDLISHVILI, V.A.; MIKELADZE, G.Sh.

Removal of oxide inclusions from steel during deoxidation
by iron-silicon-aluminum alloys. Stal' 23 [i.e. 24] no.4:
316-318 Ap '64. (MIRA 17:8)

1. Gruzinskiy institut metallurgii.

GABISIANI, A.G.; MUSHKUDIANI, Z.A.; NODIYA, T.K.; MCHEDLISHVILI, V.A.

Changes in oxygen content during the smelting and pouring
of open-hearth steel. Soob. AN Gruz. SSR 33 no.3:627-633
Mr '64 (MIRA 17:8)

1. Institut metallurgii, Tbilisi. Predstavleno akademikom
F.N. Tavadze.

L 11177-66 EWT(m)/EPF(n)-2/T/EWP(t)/EWP(b)/EWA(c) JD/WV/JG
 ACC NR: AP6004954 SOURCE CODE: RU/0027/65/010/001/0079/0087
 AUTHOR: Mcedlievili, V. A.; Mikiasvili, S. M.
 ORG: Institute of Metallurgy, Tbilisi
 TITLE: Effect of the surface properties of oxides on the process of the deoxidation
 of steel
 SOURCE: Studii si cercetari de metalurgie, v. 10, no. 1, 1965, 79-87
 TOPIC TAGS: liquid metal, iron, oxide, oxidation, steel, metal purification,
 surface property
 ABSTRACT: A report on studies to determine the adhesion of
 relatively pure liquid iron and iron with an oxygen content
 of 0.023 percent, as well as steels, as against the hard
 compounds of the binary system $Al_2O_3 - SiO_2$ and as against
 the oxide inclusions formed in the system during desoxidation
 with silicon, aluminum and manganese alloys. Also reports
 on the determination of the interphase tension at the metallic
 limits with these phases and the qualitative estimate of the
 capacity for removing the desoxidation reaction products from
 the steel in terms of the surface properties. Orig. art. has: 4 figures and
 2 tables. [JPRS]
 SUB CODE: 11 / SUBM DATE: 15Oct64 / ORIG REF: 010 / OTH REF: 004

MCHEDLISHVILI, V.I.

Biomycin and levomycetin in the prevention and treatment of experimental dysenterial intoxication [with summary in French. P.58]. Antibiotiki 1 no.6:54-56 N-D '56. (MLRA 10:2)

1. Laboratoriya Fiziologii immuniteta (zav. D.F.Pletsityy) Instituta normal'noy i patologicheskoy Fiziologii AMN SSSR i kafedra infektsionnykh bolezney (zav. G.V.Kvitashvili) Tbilisskogo Meditsinskogo instituta.

(SHIGELLA DYSENTERIAE,

toxin, eff. of chlortetracycline & chloramphenicol on
exper. pois. (Rus))

(CHLORTETRACYCLINE, effects,

on exper. Shigella dysenteriae toxin pois. (Rus))

(CHLORAMPHENICOL, effects,

same)

~~MACHEDLISHVILI, V.I.~~
MCHEDLISHVILI, V.I.

Effect of disulfane on dysenterial intoxication. Zhur.mikrobiol.
epid. i immun. 28 no.9:76-78 S '57. (MIRA 10:12)

1. Iz Instituta normal'noy i patologicheskoy fiziologii AMN SSSR
i Tbilisskogo meditsinskogo instituta.

(DYSENTERY, BACILLARY, experimental,
eff. of sulfonamides (Rus))

(SULFONAMIDES, effects,
on exper. bacillary dysentery (Rus))

MCHEDLISHVILI, V. I.: Master Med Sci (diss) -- "The problem of treating chronic dysentery patients (Clinical and experimental investigation)". Tbilisi, 1958. 37 pp (Tbilisi State Med Inst), 200 copies (KL, No 5, 1959, 145)

MCHEDLISHVILI. Ye. A.

Mchedlishvili. Ye. A.- "The construction of the central projection point on axonometric axes," A commemorative collection of transactions dedicated to the 25th anniversary of the Institute, (Gruz. politekhn. inst im. Kirova, No 17), Tbilisi, 1948, p. 43-73, (Resume in Georgian)

SO: U-5240, 17, Dec. 53, (Letopis 'Zhurnal 'nykh Statey, No. 25, 1949).

MCHEDLISHVILI, Ye. A., Dr. Tech. Sci. (diss) "Design Bases of
Descriptive Geometry with Applications to Stereophotogrammetry,"
Leningrad, 1961, 34 pp (Leningrad Mining Instit.) 200 copies
(KL Supp 12-61, 261).

26037
S/137/61/000/007/002/072
A060/A101

: 5 2610

AUTHORS: Mchedlov-Petrosyan, O. M.; Gogicheva, Kh. I.; Khatlashvili, E. G.;
Norakidze, G. K.

TITLE: Laboratory investigation of the effect of vacuum extrusion upon
some properties of forsterite refractories

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 7, 1961, 4, abstract 7B22
("Tr. In-ta prikl. khimii i elektrokhimii. AN GruzSSR", 1960, v. 1,
183-186)

TEXT: It is established that the effect of vacuum upon the properties of
objects largely depends on the grain composition of the mixture, the extrusion
pressure and the baking temperature. At low baking temperatures extrusion under
vacuum does not change the porosity of objects. In the presence of a great
amount of coarse fractions in the granular structure vacuum does not show a
noticeable effect on the porosity. An increase in extrusion pressure at the
same vacuum and almost the same granular composition lowers the apparent porosity.
Vacuum shows the greatest effect with medium grain size and a not very low (not
below 1,600°C) baking temperature. In these cases the decrease in the apparent

Card 1/2

Laboratory investigation of the effect ...

26037
S/137/61/000/007/002/072
A060/A101

porosity constitutes 5-20 percent and attains values of the order of 4 percent. The addition of a considerable amount of crude serpentine while using vacuum yields good results. The effect of extrusion in vacuum on thermal stability is small. Slag stability is almost always better for vacuum specimens. A diagram of a vacuum extrusion set-up is given and the method of testing is described.

V. Oparysheva

[Abstracter's note: Complete translation]

Card 2/2

16-143. Furnace With Tungsten Heating Element. O. P. Mchedlov-Petrosian. *Factory Laboratory (U.S.S.R.)*, v. 13, April 1947, p. 494-495. (In Russian.)
A laboratory tube furnace for temperatures of 1500 C. inside the tube.

117 AND 118 PAGES

PROCESSING AND REPRODUCTION MARKS

120 AND 121 PAGES

2

Heat of formation of barium metasilicate from barium sulfate and aluminum oxide. A. I. Avgustinik and O. P. Mchedlov-Polunyan. *J. Applied Chem. (U.S.S.R.)* 20, 884-80 (1947) (in Russian). From measurements of the vol. of total gas evolved in the reaction $\text{BaSO}_4 + \text{Al}_2\text{O}_3 = \text{BaO} \cdot \text{Al}_2\text{O}_3 + \text{SO}_2 + \frac{1}{2}\text{O}_2$ in a high-temp. W-wire furnace under N, the total gas pressures p at equil. at (selected points) 1000, 1100, 1200, 1250, 1300, 1450, and 1533° were 0.0177, 0.0287, 0.0464, 0.0739, 0.3317, 0.7081, 1.0000 atm. The heat ΔH of the reaction (at 25°) was calcd. by the 3rd approx. formula of Ulich (C.A. 23, 5478) $\log K_r = -(\Delta H/4.573 T) + (\Delta S/4.573) + (\Delta C_p/4.573) F(T/298)$ where $F = \ln(T/298) + (298/T) - 1$, and ΔC_p = difference of heat capacities. From the measurements of p , at 1533°, $K_r = 0.3947$; to det. ΔC_p , the data of Kelley were taken for SO_2 , BaSO_4 , and Al_2O_3 , those of Bryant for O_2 ; C_p for $\text{BaO} \cdot \text{Al}_2\text{O}_3$ was calcd. by the Debye function, with the characteristic temp. calcd. according to Lindemann, and using $C_p = C_v + 0.000787 T^{3/2}$; this gives $\Delta C_{p, \text{max}} = 2.35$. To det. the entropy change ΔS (at 25°), it was assumed, following Kelley, that $S(\text{BaO} \cdot \text{Al}_2\text{O}_3) = S(\text{BaO}) + S(\text{Al}_2\text{O}_3) = 39.2 \text{ cal./mole/degree}$, hence $\Delta S = 68.8$. This leads to $\Delta H_{\text{rxn}} = -147.04 \text{ kcal./mole}$. On the other hand, Nernst's approx. formula gives -140.03 . Adopting the mean $\Delta H_{\text{rxn}} = -143.54$, it is found, with the aid of known data, that $\text{BaO} + \alpha\text{-Al}_2\text{O}_3 = \text{BaO} \cdot \text{Al}_2\text{O}_3$, $\Delta H_{\text{rxn}} = -3.81$ and for $\text{BaO} + \gamma\text{-Al}_2\text{O}_3$, $\Delta H_{\text{rxn}} = 4.24 \text{ kcal./mole}$. N. Thon

COMMON ELEMENTS

COMMON VARIABLE INDEX

ABR-51A METALLURGICAL LITERATURE CLASSIFICATION

FROM SOURCE

117 AND 118 PAGES

120 AND 121 PAGES

MCHEDLOV-PETROSYAN, O. P.

Kinetics of the reaction of barium sulfate with alumina in the solid phase. A. I. AVGUSTINIK AND O. P. MCHEDLOV-PETROSYAN. *Zhur. Priklad. Khim.*, 20 [11] 1125-32 (1947).—Kinetics of reaction between BaSO_4 and Al_2O_3 were studied at 1200°, 1240°, 1300°, 1350°, and 1400° using sulfate:alumina ratios of 1:1, 2:1, and 3:1 with and without the addition of 5% CaF_2 and CaO . Progress of the reaction was judged from the volume of the liberated gases. With a 1:1 mixture the reaction proceeds noticeably above 1200°C., is accelerated greatly at 1300°, but does not reach completion at 1400°C. The reaction between the BaSO_4 and Al_2O_3 is impeded by the large energy of detachment, which was 170, 240, and 260 kg.-cal./mole for 1:1, 2:1, and 3:1 mixtures, respectively. The addition of 5% CaF_2 increased the contact between the particles and raised the energy of detachment somewhat. The addition of 5% CaO at low temperatures caused a sharp drop in the energy of detachment and, despite the decrease in contact between the particles, accelerated the reaction; with rising temperature the reaction was slowed down considerably. The reaction is considered essentially a surface type. Cf. *Ceram. Abstracts*, 1948, Aug., p. 190f. B.Z.K.

MECHEDLISHVILI, O. P.

Mechedlishvili, O. P. and Gogicheva, Kh. I. "On the problem of getting water-resistant clinkers from dolomite Abano," Sbornik. Akad. nauk Gruz. SSR., 1968, No. 5, p. 491-92, - Bibliog: 10 items

SO: U-4934, 29 Oct 53, (Letopis 'Zhurnal 'nykh Stroy, No. 10, 1959).

MCHEDLAV-PETROSYAN, O. P.

USSR/ Geology
Clay
Gypsum

Feb 1948

"Gazha /TN: Mixture of clay and Gypsum/ and Its Thermal Dissociation,"
P. P. Budnikov, Corr Mem, Acad Sci USSR, O. P. Mchedlav-Petrosyan, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Describes deposits of gazha at Tbilisi, Signakh, Akhaltsikh (Georgian SSR),
Erevan, Takhmagan, Leninakan (Armenian SSR), Kirovobad, Lenkoren, Taz
(Azerbaijdzhan SSR) and others. Tabulates percentage dissociation under differ-
ent conditions.

PA 43/43T28

MCHEDLOV-PETROSYAN, O. P.

PROCESSING AND PROPERTIES INDEX	
C 3212	Gypsum clay and its thermal dissociation, P. P. BUNNIKOV AND O. P. MCHEDLOV-PETROSYAN. Doklady Akad. Nauk S.S.S.R., 59 [4] 719-21 (1948).—Thermal dissociation tests were conducted with gypsum clay containing 20 to 90% gypsum obtained from the largest deposits in the Georgian S.S.R. When the gypsum content is less than 30%, it is possible to obtain almost complete liberation of SO_2 by heating at $1100^\circ C$. for 0.5 to 1 hr.; complete expulsion of SO_2 occurs from the melt. Gypsum clay having a low gypsum content should be utilized for making binders or SO_2 . B.Z.K.

MCHEDLOV-PETROSYAN, O. P.

PA 45/49T35

USSR/Engineering
Refractories
Refractory Materials

Dec 1

"Prospective Use of Georgian Magnesians Refractories for the Production of Basic Refractories," O. P. Mchedlov-Petrosyan, Kh. I. Gogicheva, V. N. Shapalidze, Inst of Metal and Mining, Acad Sci Georgian SSR, 4 pp

"Dok Ak Nauk SSSR" Vol XLII, No 4

Experiments in preparing: (1) dolomitic (magnesian dolomite) refractories using dolomite from Abano a serpentine from Tanelise, (2) forsterite refractories from burnt serpentine with addition of

USSR/Engineering (Contd)

45/49T35
Dec 48

magnetite, and (3) forsterite refractory using burnt serpentine with addition of magnesium oxide, obtained from serpentine through cyclical chemical processing by hydrochloric acid. Minerals from these deposits were tested first because of their proximity to chief user of refractories, Zakavkazskiy Metal Factory. Submitted by Acad D. S. Bel'yankin, 2 Oct 48.

45/49T35

MCHEDLOV - PETROSYAN, O.P.

MCHEDLOV-PETROSYAN, O.P.

Extracting manganese oxide from serpentine. Trudy Inst. met. i gor.
dela AN Gruz. SSR 2:123-127 '49. (MIRA 11:1)
(Serpentine) (Manganese oxides)

USSR/Minerals

Refractories

Furnaces, Metallurgical

Mar 49

"Laboratory Tests on the Production of Dolomite and Forsterite Wares From Raw Materials of the Georgian SSR," O. P. Mchedlov-Petrosyan, Cand Tech Sci, Kh. I. Gogicheva, Engr, 4 pp

"Ogneupory" No 3

Laboratory tests show possibility of using dolomite from Abano Rayon and serpentinites from Tselis' village in Znaurskiy Rayon for making waterproof high-grade dolomite refractory materials, and Tselis' serpentinite containing a

50/4979

USSR/Minerals

(Contd)

Mar 49

15% impurity of magnesium oxide for making forsterite refractory materials -- all for use in metallurgical furnaces of the Transcaucasus.

Stresses need for establishing pilot plant in Abano for processing deposits containing refractory materials, and organization of production to meet industrial requirements of the Transcaucasus. Six tables give details on composition of the refractories.

50/4979

MCHEDLOV-PETROSYAN, O.P.

36182 MCHEDLOV-PETROSYAN, O. P. I BUDNIKOV, P. P.

"Gazha"-prirodnaya smes' gipsa i gliny-baza dlya izgotovleniya vyazhushchiKh materialov. Priroda, 1949, No. 11, S. 51-52.--Bibliogr: 9 nazv.

SO: Letopis' Zhrunal' nykh Statey, No. 49, 1949

1ST AND 2ND SERIES		3RD AND 4TH SERIES	
PROCESSES AND PROPERTIES INDEX			
CA		19	
<p>Laboratory experiments in preparing dolomite and forsterite products from raw materials of the Georgian S.S.R. O. E. Melnikova-Petrovskaya and Kh. I. Gogicheva. <i>Ognesperiy</i> 14, No. 2, 114-118(1949).—The raw materials were dolomites from the Abano deposits and serpentinite from the nearby Tunduk deposit. Serpentinite analyzed SiO_2 33.55, Al_2O_3 1.31, Fe_2O_3 9.41, CaO 3.04, MgO 39.14, SO_3 0.22, and ignition loss 14.23%. Dolomite analyzed SiO_2 1.43, Al_2O_3 0.70, Fe_2O_3 0.15, CaO 32.42, MgO 22.20, SO_3 0.19, and ignition loss 44.51%. Water-resistant dolomite clinker was prep'd. from charges having dolomite/serpentinite ratios of 4/1 and 2.5/1 by wetting the mixts., pressing into cylinders, drying, and firing at $1520 \pm 20^\circ$ for 1.5 hrs. Dolomite refractories were made from the 3.5/1 clinker having 40% 0-0.75 mm., 16% 0.75-0.3 mm., 20% 0.3-0.088 mm., and 25% finer than 0.088 mm. The material was mixed with water, specimens were pressed under 350 kg./sq. cm., dried, and fired at $1590 \pm 20^\circ$ for 2 hrs. Firing shrinkage was 5.5%, vol. wt. 2.78 g./cc., vol. porosity 13.5%, compressive strength 500 kg./sq. cm., thermal-shock resistance 3 cycles, initial deformation, 4% compression, and destruction under 2 kg./sq. cm. at 1590°, 1635°, and 1710°, resp. High shrinkage was due to the low percentage of coarse grains and to insufficient pressure. In prep'g. forsterite refractories, the serpentinite lumps (3-5 cm.) were first fired at 1200° for 2 hrs. The fired product contained 41.92% MgO and 41.24% SiO_2, which corresponds to a wt. ratio of $\text{MgO}/\text{SiO}_2 = 1.01/1.00$ instead of 1.34/1.00 for forsterite; $\text{Mg}(\text{OH})_2$ and magnesite metallurgical powder were added to give the add'l. MgO. The mix was prep'd. with 24% MgCl_2 soln., cylinders were pressed under 350 kg./sq. cm., dried, and fired at $1650 \pm 20^\circ$; max. temp. was reached in 3 hrs. and held for 2 hrs. The product analyzed SiO_2 39.25, Al_2O_3 2.25, Fe_2O_3 8.00, CaO 2.30, and MgO 49.27%. Firing shrinkage was 9%, vol. wt. 2.53 g./cc., vol. porosity 12.2%, thermal-shock resistance 3 cycles, initial deformation, 4% compression, and destruction under 2 kg./sq. cm. at 1500°, 1550°, and 1600°, resp. The specimens had no cracks but showed small pores when fractured. The high shrinkage can be overcome by firing the serpentinite at a higher temp. and using higher pressure.</p> <p style="text-align: right;">B. Z. Kamich</p>			
<p>ASB-52A METALLURGICAL LITERATURE CLASSIFICATION</p>			
FROM SYNDICATE		FROM BUREAU	
LONDON - 4		STALOT ONE ONE LII	
<p>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100</p>		<p>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100</p>	

1ST AND 2ND DEGREE										100 AND 8TH DEGREE									
PROCESSING AND PROPERTIES INDEX																			
<p>C Raising the water resistance of materials from gypsum clay. P. P. HUNNIKOV AND O. P. MCHURADYAN-PETROSYAN. <i>J. Applied Chem. (U.S.S.R.)</i>, 22 (3) 217-22 (1949). — Tests were made with Orkhevi gypsum clay analyzing SiO_2 12.26, Al_2O_3 + Fe_2O_3 10.10, CaO 24.15, MgO 1.77, SO_3 32.71, and ignition loss 16.76%, and also with Kaspi gypsum clay analyzing SiO_2 24.13, Al_2O_3 + Fe_2O_3 7.50, CaO 22.10, MgO 0.60, SO_3 21.22, and ignition loss 22.15%. Petrographic analysis of Orkhevi clay showed a large amount of gypsum crystals, a smaller amount of quartz and plagioclase, occasional crystals of monoclinic pyroxene and biotite, and spots of limonite. Kaspi clay showed gypsum crystals, calcite, crystalline quartz, crystals of feldspar, and iron oxide. Calcination of Orkhevi clay at 780° and 880°C for 2 hr resulted in an SO_3 loss of 5%; for Kaspi clay it was 8% after 2 hr at 800°. Calcined Orkhevi clay was mixed with 5, 10, and 15% slaked lime and formed into specimens with sand (1:3); compression and tension tests were made after air and water storage. In all cases, the optimum lime content was 5%, greater strength being obtained with clay calcined at 880° than at 780°C. Samples stored in water showed greater strength than those stored in air after 28 days. After 28 days storage in water, maximum compressive strength was 38.0 kg/cm² and tensile strength 10.3 kg/cm². Petro-</p> <p>graphic analysis of Kaspi clay calcined at 800°C showed scattered crystals of anhydrous gypsum, small anhagmistic grains of quartz, and also highly birefracting crystals with an index close to that of dicalcium silicate. Test samples made of calcined clay with sand (1:3) but without lime had a compressive strength of 55 kg/cm² and a tensile strength of 11 kg/cm² after 28 days of storage. The samples showed no washout after being kept in running water (about 10,000 liters). Samples remaining from the 28 day tests were subjected to alternating wetting and drying and, when tested after 8 years, showed a compressive strength of 105 kg/cm². Microscopic study revealed uniform distribution of the quartz grains, which were evenly surrounded by an amorphous bonding mass. The high strength of the samples is due to this mass. Analysis of thermograms indicates the absence of CaCO_3, clay, and gypsum (or anhydrite); changes on the curves at 573° and 870° indicate the presence of quartz, but despite the large amount of SiO_2 present the effect was insignificant because of the small value of the heat of transformation. It is assumed that the quartz grains are bound by a gypsum bond consisting of CaO, Al_2O_3, and SiO_2, which slowly undergoes endothermic changes when heated, loses water actively at 200°, and then changes gradually. Such a gradual water loss is characteristic of sulfoaluminate.</p> <p style="text-align: right;">B. Z. K.</p>																			
<p>ASB-11A METALLURGICAL LITERATURE CLASSIFICATION</p>																			
SIGNATURE										SIGNATURE									
SIGNATURE										SIGNATURE									